

CLAIMS

We claim:

1. A semiconductor device comprising:

a borderless logic array; area I/Os; and wherein said logic array comprises a repeating core, and wherein at least one of said area I/Os is a configurable I/O, and wherein said configurable I/O comprises at least one metal layer that is the same for all I/O configurations.

2. A method of fabricating a semiconductor device, comprising the steps of:

providing a semiconductor substrate;

forming a borderless logic array, including a plurality of area I/Os, on the semiconductor substrate; and wherein said logic array comprises a repeating core, and wherein at least one of said area I/Os is a configurable I/O, said configurable I/O comprising at least one metal layer that is the same for all I/O configurations.

3. A semiconductor wafer comprising:

a borderless logic array, wherein said borderless logic array comprises a repeating module containing logic cells and I/O cells and a redistribution layer for redistributing at least some of said I/O cells' connections to pads used in packaging.

4. A semiconductor wafer according to claim 3, wherein said I/O cells are arranged in spaced parallel lines.

5. A semiconductor wafer according to claim 4, wherein spaced parallel lines are spaced at least 0.2 mm apart but less than 3 mm apart.

6. A semiconductor wafer according to claim 3, wherein said repeating module comprises at least two metal layers.
7. A semiconductor wafer according to claim 6, wherein at least one of said metal layers comprises a repeating pattern.
8. A semiconductor wafer according to claim 6, wherein each of said metal layers comprises a repeating pattern.
9. A semiconductor wafer according to claim 6, wherein additional custom layers are arranged to form a specific die size on said semiconductor wafer.
10. A semiconductor wafer according to claim 6, wherein additional custom layers are arranged to form at least two different die sizes on said semiconductor wafer.
11. A semiconductor device comprising repeating I/O cells, and wherein said repeating I/O cells are customized to different functions by using only custom via layers.
12. A semiconductor device according to claim 11, further comprising repeating logic cells, and wherein said semiconductor device is customized by using only custom via layers.